MARYLAND
HEALTH CARE
COMMISSION

Practitioner Utilization: Trends within Privately Insured Patients, 1999-2000

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Dr. Christopher Hogan of Direct Research, LLC is the principal author of this report. Ms. Lauralynn Smith and Ms. Patricia Caldwell assisted with editing and report design. A programming team at SSS consisting of Ms. Laurie Hamilton, Mr. Adrien Ndikumwami, Dr. Raymond Hu, and Mr. John May edited the payer data submissions, organized the Medical Care Data Base, and completed the numerous data analyses included in this report. The Commission thanks the entire SSS team.

Executive Summary

This report examines payments to physicians and other health care practitioners for the care of privately insured Maryland residents under age 65. Analysis is based on the health care claims and encounter data that most private health insurance plans serving Maryland residents submit annually to the Maryland Health Care Commission. Data from 1999 and 2000 are used to track changes in service use and spending, separately, for individuals in health maintenance organization (HMO) plans and individuals in other, non-HMO plans.

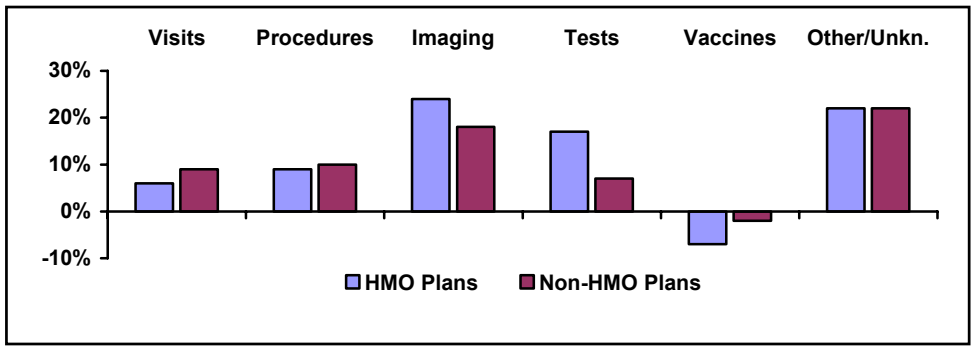
Spending for practitioners' services grew substantially between 1999 and 2000, whether measured from insurers' aggregate accounting data or directly from the claims for individual services. For the segment of the industry for which the claims data are most reliable – non-HMO plans – total reported spending grew 10 percent (Table ES-1). This spending increase was due entirely to an increased quantity of care, and was not due to increases in fees (prices) for services. On average, practitioner fees paid for fee-for-service claims in Maryland were essentially unchanged between 1999 and 2000. The lack of fee increases continues a trend noted in last year's Practitioner Report.

Table ES-1: Estimated Sources of Spending Growth for Non-HMO Plans

Sources of Spending	Growth
Increase in Payment Rates	0%
Increase in Reported Persons Using Services	8
Increase in Services per Reported User	0
Increase in Intensity per Service	2
Total Expenditure Increase, 1999-2000	**10**

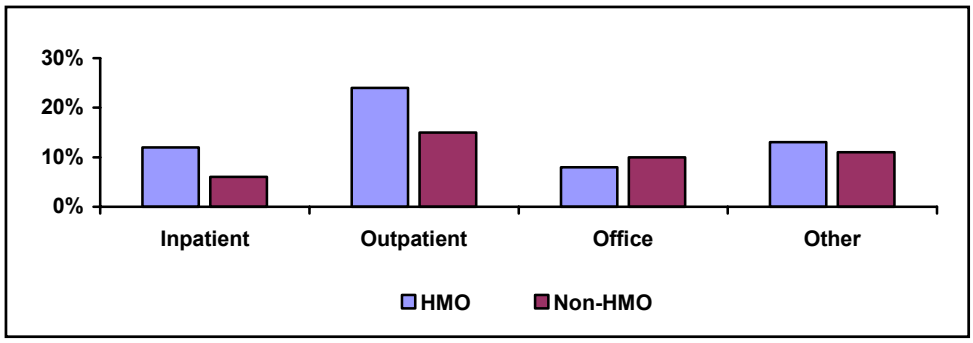
After weighting the HMO data to remove some of the effects of variation in data reporting, the HMO and non-HMO plans showed similar patterns of growth in volume of care by type of service (Figure ES-1). Imaging was the fastest growing major category of service, led by increased use of computerized tomography (CT) and magnetic resonance imaging (MRI) scans. Pediatric vaccines, by contrast, had lower reported use in 2000 than in 1999. It is not clear whether the decline in practitioner payments for pediatric vaccines indicates lower use, or merely reflects technical factors reducing the number of practitioner bills observed for pediatric vaccines.

Figure ES-1: Growth in Volume of Care, 1999-2000



By site of service, spending grew fastest in hospital outpatient departments (including emergency rooms) for both HMO and non-HMO plans (Figure ES-2). This matches the high growth of payments to such facilities observed in the 2000 Maryland State Health Expenditure Accounts (SHEA) and nationwide in 2000. This growth was driven in part by higher use of ambulatory procedures, but also by an 18 percent increase in spending for emergency room visits (for non-HMO plans). Reasons for more emergency room care for this well-insured population are not clear. Practitioners' offices, by contrast, saw lower spending growth, and use of care grew most slowly in the inpatient setting.

Figure ES-2: Service Growth by Place of Service, 1999-2000



For both HMO and non-HMO plans, reported data show employers shifting from fully insured plans to self-funded types of coverage arrangements (Figure ES-3).[1] This trend has been noted nationwide and typically occurs during times of rapidly increasing health insurance premiums. This trend may influence the growth of the HMO and non-HMO

[1] The employer-sponsored self-insured category includes the self-insured business of non-HMO plans and HMO business in which the principal role of the HMO is to supply access to the HMO's provider network.

segments of the market, as a higher fraction of HMO care is for private employer-sponsored fully insured products (Figure ES-4).

Figure ES-3: Employer-Sponsored Plans, Self-Insured versus Fully Insured: Percent Change, 1999-2000

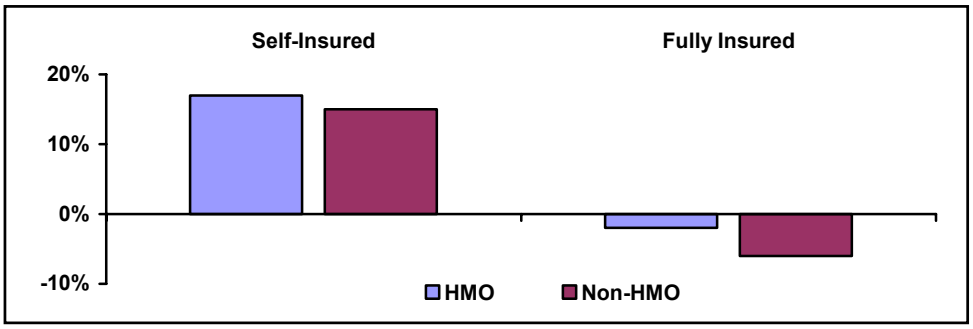
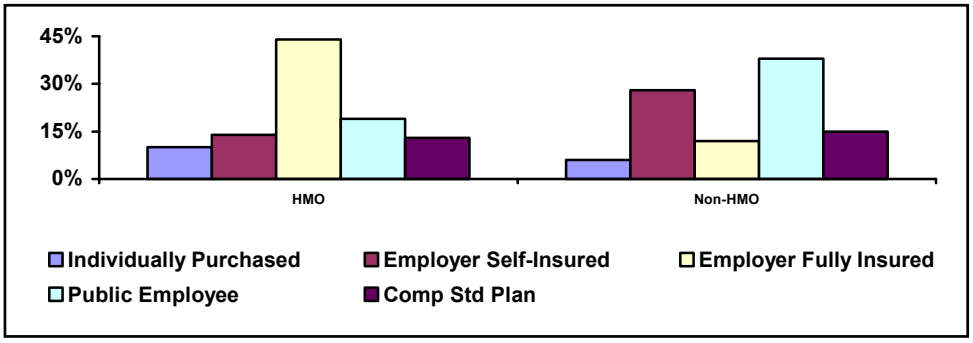


Figure ES-4: Percent of Care by Type of Coverage, 2000

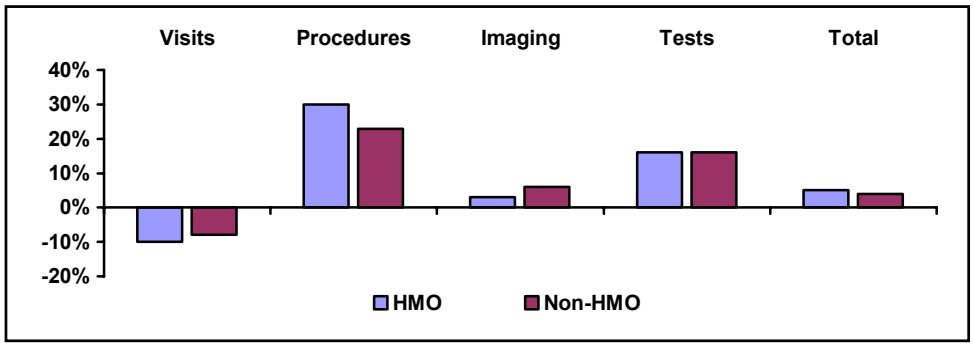


On average, Maryland private insurers' practitioner fees (including payments from both plan and patient) were 4 to 5 percent above Medicare's rates. That is a relatively small differential compared to published studies of private payers' data nationwide, and suggests that Maryland insurers have restrained increases in practitioner fees. For the HMO plans, that was not a surprising result. A 1997 survey of insurers suggested that Maryland HMOs' practitioner payment rates were only modestly higher than Medicare's.[2] Perhaps more surprisingly, there was little average difference between non-HMO payment rates and the fee-for-service payments of HMOs. HMO plans paid less than non-HMOs for office visits and evaluation and management services, but substantially more for services provided on a fee-for-service basis in hospital inpatient and outpatient settings. This comparison only reflects HMO claims paid on a fee-for-service basis and does not include HMO practitioner payments made under capitation arrangements.

[2] Crane, M. "How Low Can Fees Go?". *Medical Economics.* 1997 April 7: 26 ff.

The gap between private and Medicare fees varied significantly by type of service (Figure ES-5). For office visits (and some other evaluation and management services), private insurers' payment rates were below the Medicare level, while private payment rates for procedures and tests were significantly above the Medicare level. Historically, that pattern has been typical of Medicare-versus-private fee differentials nationwide, and probably reflects, in part, ongoing Medicare fee schedule revisions that increase payment for evaluation and management services and reduce payments for other types of care.

Figure ES-5: Private versus Medicare Fee Levels as Baseline



Contrasting the different regions of Maryland, fees paid by the non-HMO plans were 15 percent lower in the Baltimore area than in the National Capital area. Medicare rates, by contrast, are just 5 percent lower. Some (but not all) of the difference could be attributed to the mix of payers, with Baltimore having a higher concentration of the payers offering the lowest rates statewide.

1. Introduction

Each year since 1996, the Maryland Health Care Commission (MHCC) has published a Practitioner Report describing the use of insured practitioner services by residents and the associated payments by insurance companies and recipients for those services, as required by Health-General Article § 19-134(g)(2). To provide the Commission with data on fees and utilization patterns, insurance companies and health maintenance organizations (HMOs) meeting certain criteria[3] are required to submit information to the Commission under COMAR 10.25.06 on the health care practitioner services provided to Maryland residents. The Maryland Medical Care Data Base (MCDB) is created from these submissions.

For calendar year 2000, the Commission received usable data from 33 payers, including all major health insurance companies.[4] This source is supplemented with Medicare claims information on the use of practitioner services by Medicare beneficiaries 65 years of age or older who have Medicare Part B coverage.

Practitioners' care now constitutes the largest category of service in the Maryland State Health Expenditure Accounts (SHEA).[5] Based on accounting data submitted by Maryland insurers, total practitioner care payments for the privately insured rose 9.1 percent between 1999 and 2000. This accounted for one-third of expenditure growth for the privately insured population.[6]

This year, the Practitioner Report takes the form of an analysis of practitioner fees and volume of care, looking both at 2000 fee levels and trends in spending and fees from 1999 to 2000. The key technical questions to be addressed are:

- How do private insurers' practitioner fees compare to Medicare rates for the same services?
- How does this vary by type of service, specialty, region, and payer type?

[3] The company is licensed in the state of Maryland and collects more than $1 million in health insurance premiums.
[4] A number of small payers received waivers from contributing data, but these payers together account for less than 1 percent of total health insurance premiums reported in Maryland.
[5] MHCC, *State Health Care Expenditures: Experience from 2000* (Baltimore, MD: MHCC, January 2002).

- To what extent do rising fees, increased volume of care, and provision of more complex services contribute to the high growth in spending from 1999 to 2000?
- Where is spending and volume of care rising at the fastest rate?

Chapter 2 of this report presents an overview of spending and volume of care in the five regions of Maryland. **Chapter 3** compares private payers' fees to Medicare fees and contrasts the fees paid by HMO and non-HMO plans. **Chapter 4** looks at spending growth in the non-HMO plans in detail. For these plans, the data should give a reasonably complete record of practitioner spending for their covered populations. **Chapter 5** looks at growth in volume of care in the HMO plans. Data reporting variations make it more difficult to interpret the data, but, in general, trends in volume of care for these plans match trends for the non-HMO plans. **Chapter 6** gives a brief summary of major findings. Appendices list the payers contributing data to this report, outline methods and provide some sensitivity analyses for the main results, and show the Maryland regions.

[6]MHCC, ibid, calculated from Appendix Tables 1A and 1B.

2. Brief Overview of Reported Spending Growth

Total spending for practitioners' services rose substantially from 1999 to 2000, whether measured by payers' aggregate accounts or from the claims data. For individuals with non-HMO coverage (where data reporting is most consistent), the MCDB shows a 10 percent growth in spending. For HMO enrollees (where data reporting improvements may overstate growth trends), there was high growth in fee-for-service payments but essentially no growth in care reported under capitated arrangements. These findings are qualitatively consistent with payers' aggregate accounting as reported in the 2000 SHEA. The 2000 SHEA shows total private practitioner spending growth of about 9.1 percent, with private enrollment shifting slightly from HMO to non-HMO plans.[7]

Introduction to the Medical Care Data Base: Data Elements and Caveats

The Maryland MCDB compiles claims and encounter data submitted by most insurers offering health insurance to Maryland residents. Most practitioner services provided to privately insured Maryland residents are captured on MCDB records. Each individual practitioner service generates a separate record in the MCDB.

Insurers use a standard format for reporting the data. The specific service provided is identified by its Current Procedural Terminology (CPT) code.[8] Certain items or services not covered by CPT are identified by a Healthcare Common Procedure Coding System (HCPCS) code, or by special ("homegrown") codes developed by the insurers.[9] In addition to identifying the service provided, each record shows the payments from the insurer and patient (for non-capitated care), patient age and county of residence,

[7] MHCC, ibid.
[8] CPT codes are the industry-standard method for identifying the procedures, tests, visits, and other services performed by practitioners. CPT was developed and is maintained by the American Medical Association.
[9] HCPCS (also known as HCFA Common Procedure Coding System) was developed and is maintained by the Centers for Medicare and Medicaid Services (CMS). Insurers provided MHCC with the definitions of their "homegrown" codes as part of the data submission process.

physician specialty, and other attributes of care such as site of service and type of coverage. Patients are identified only by an encrypted number generated by each payer.

This report uses the MCDB to track changes in payments, services, relative value units (RVUs) of care, number of persons receiving services, and the fee level (average payment per RVU of care). Interpreting the results shown here requires an understanding of these quantities and of the limitations of the MCDB data. This report focuses on the following quantities:

- **Total payments** for practitioner care include payments from the insurer and patient, including any deductible, coinsurance, and balance billing amounts paid directly out-of-pocket by the patient and reported on the claims data. (Payments that may not have been reported on the claims, such as bonus payments for physician performance, are discussed in Appendix B.)
- **Count of services** is a simple count of the number of services provided to patients, without regard to the cost, complexity, or intensity of those services. It is, in effect, a count of the number of claims or number of items that were billed.
- **Total RVUs of care** is a measure of the quantity of care, where more complex (and typically more costly) services have higher RVUs. It is a more sophisticated measure of the quantity of care than a simple count of services. (Appendix B has more information on RVUs.)
- **Count of service users** is based on the encrypted patient identifiers reported by the payers. Because payers may use different numbering systems for their different insurance products, the count is done separately for HMO capitated data, HMO fee-for-service data, and non-HMO data.
- **Average fee level or payment per RVU** is calculated from total payments divided by total RVUs. This is the per-unit price of practitioner care, using RVUs to measure the units of care. This figure will be higher in areas where insurers' fee schedules are higher and will increase when insurers raise their fee schedules.

Limitations of the MCDB

While the MCDB records include most of the practitioner care provided to privately insured Maryland residents, there are some significant omissions and limitations. Readers should be aware of the limitations of the MCDB and caveats for this analysis.

First, certain population groups are not represented in this analysis. Those non-represented groups include:

- Maryland residents who have primary insurance through a private plan but (1) are 65 years or older or (2) are insurees whose private plan is not required to submit data to the MHCC.
- Maryland residents enrolled in Medicare.
- Maryland residents enrolled in Medicaid.
- Maryland residents who are uninsured.

Second, for the plans and populations covered (i.e., under 65 privately insured), some categories of service are not reported in the underlying database. These include:

- Capitated primary care services. Within capitated services, only specialty care services are reported.
- Carve-outs for self-insured plans (for example, psychiatric care paid through a psychiatric benefit management firm).

Third, data reporting by the HMO plans is substantially different from reporting by the non-HMO plans. For the non-HMOs, reported claims data show payments and services for essentially all practitioner care. For HMO plans, two different methods are used to report the data. HMO services paid on a fee-for-service basis are reported on claims data, similar to the non-HMO plans. Specialty care provided under capitation arrangements is reported on encounter data, providing information on services but not payments. Primary care under capitation arrangements is not reported. Because of this, only a subset of all HMO care is captured in the MCDB and variations in data reporting practices appear to have a much stronger influence on the HMO data than the non-HMO data. HMO plans' data reporting continues to improve, with total reported payments and services rising faster than the actual growth in the underlying care. For this reason, the HMO data must be substantially adjusted to provide any reasonable estimate of trends in service use.

Fourth, changes in plan enrollments have two effects on the data presented here. In 2000, private HMO enrollment in Maryland declined by about 2 percent, while private enrollment in non-HMO plans increased by about 3 percent.[10] Some of the increased spending observed for non-HMO plans is a reflection of increasing enrollment. In addition, persons switching plans during a year may get counted twice in the estimate of unique service users. Significant increases in the number of individuals changing insurance plans will inflate the count of service users.

[10] MHCC, ibid.

Fifth, the only count of persons directly available for this analysis is a count of persons using services, not the count of all individuals enrolled in these plans. Each insurer develops a set of unique (and encrypted) patient identifiers to allow MHCC to identify individuals but maintain the confidentiality of the data. This has historically been a weak part of the data reporting system. Individuals may be counted or not based on the use of a single service during the year, and some insurers do not routinely track individuals separately within families. Paradoxically, substantial improvements in payers' data reporting make it difficult to compare current-year and prior-year data. The large apparent increases in service users reported here may, in part, be an artifact of improved data reporting.

Sixth, all payment information is based on the amounts that payers reported on the claims data. To the extent that payers have bonuses or other practice-level payment arrangements not recorded on the claims, payments may be over- or under-stated. (Some analysis of this issue is presented in Appendix B.)

Finally, only a subset of payments and services is used for the analysis of spending and pricing trends. To provide an accurate estimate of payments per service, about 15 percent of bills that would otherwise be eligible for the analysis were screened out. These were bills where payment did not reflect full payment for the underlying service, or where payments appeared extremely small or extremely large compared to the average. Examples include payment adjustment records, bills for use of a facility (rather than for practitioners' services), and minor services such as assistance at surgery (rather than payment for the surgery itself). For this reason, spending shown in the tables is modestly lower than actual total expenditures for practitioners' services.

PAYMENTS, SERVICES, AND USERS REPORTED BY THE PLANS

Table 2-1 shows MCDB totals for payment, services, and users of care by type of plan and region. These are for privately insured under-65 patients only, and have been subject to additional screens described in Appendix B. The table shows both payment and RVUs for services paid on a fee-for-service basis, and RVUs only for services paid on a capitated basis. All payers and services that passed routine data quality edits are included in this table.

For the non-HMO plans, data reflect both the growth in services and, to some minor extent, changes in patterns of enrollment. Overall, spending for these plans grew 10 percent, reported users of care increased 8 percent, and payments per user increased a

modest 2 percent.[11] The high growth in reported users likely reflects, in part, the estimated 3.1 percent increase in enrollment in these plans over this period.[12] Reported growth in service users may also, however, reflect improvements in data reporting.

Table 2-1: Practitioner Services Data Reported by Payer Type and Region, 1999-2000

PLAN TYPE AND REGION	2000 DATA					PERCENT CHANGE, 1999-2000				
	Payments ($000s)	RVUs (000s)	Services (000s)	Users (000s)	Pymts Per User	Payments	RVUs	Services	Users	Pymts per User
Non-HMO Plans										
Total	$888,971	22,972	15,859	1,168	$761	10%	11%	9%	8%	2%
National Capital Area	268,842	6,267	4,170	310	868	8	9	6	6	2
Baltimore Metro Area	447,331	12,266	8,629	601	744	10	10	8	8	2
Eastern Shore	51,610	1,300	861	76	683	18	16	14	10	7
Southern Maryland	49,923	1,329	954	72	695	13	13	10	8	4
Western Maryland	71,265	1,810	1,245	109	651	15	17	17	12	2
HMO Plans, Fee-for-Service Data										
Total	$425,424	10,885	6,142	804	529	32	25	27	8	22
National Capital Area	182,583	4,584	2,441	313	584	38	29	31	13	23
Baltimore Metro Area	159,470	4,158	2,484	329	485	29	23	26	6	22
Eastern Shore	24,932	631	348	49	506	14	12	14	9	5
Southern Maryland	26,767	658	372	45	590	48	32	46	3	43
Western Maryland	31,672	854	497	68	467	22	17	13	3	18
HMO Plans, Capitated Services										
Total	-----	4,794	5,013	718	-----	-----	0	8	10	-----
National Capital Area	-----	1,323	2,094	294	-----	-----	3	9	33	-----
Baltimore Metro Area	-----	2,391	1,975	275	-----	-----	-4	5	-7	-----
Eastern Shore	-----	513	382	69	-----	-----	-1	5	6	-----
Southern Maryland	-----	207	224	31	-----	-----	-6	24	20	-----
Western Maryland	-----	360	338	49	-----	-----	28	13	11	-----

Note: A " ----- " means not applicable. Count of HMO persons served based on unique patient identifiers separately for individuals with fee-for-service claims and capitated encounter data. Various edits of the database exclude about 15 percent of spending from the data shown in this table.
Source: Analysis of 10 percent sample of persons, Maryland MCDB 1999, 2000.

To some degree, regional patterns of spending growth for the non-HMO plans reflect enrollment changes. In 2000, across the regions, private non-HMO plans lost market share only in the National Capital area. The modest 8 percent increase in non-HMO spending for that area likely reflects, at least in part, a loss of enrollment in non-HMO plans.

[11] As noted in the prior section, the count of users may be subject to some uncertainty. Percentage changes in these tables will not exactly sum to the change in spending due to rounding error, and because the changes should be multiplied (not added) to arrive at total spending.
[12] MHCC, ibid.

For the HMO plans, the reported data reflect some mix of true underlying trends, shifts in payment methods, and improvements in the completeness of data reporting by these plans. Changes in enrollment and plan composition likely contribute to the wide variation in spending growth across regions (Table 2-1).

Data for the HMO plans is significantly harder to interpret. These plans use a combination of fee-for-service reimbursement and capitation. Reporting of these services has been improving, and shifts between these payment methods may strongly influence the reported data. The very high growth rates in reported payments do not necessarily mean large increases in the actual underlying spending. Despite the overall 2 percent reduction in HMO enrollment in 2000, the HMO plans reported more services provided and more persons served in almost all areas.

The strong upward trend in services reported by HMOs continues a pattern observed in the 1999 Practitioner Report. From 1998 to 1999, Maryland HMOs exhibited a trend toward increased reliance on fee-for-service reimbursement methods and decreased reliance on capitation. In addition, they showed an increased ability to accurately report encounters for the capitated providers. Both of these factors appear to be at work in 2000, increasing the reported volume of claims from these payers.

The regional composition of the reported data varies substantially. For the non-HMO claims and the HMO capitated data, the Baltimore area accounts for more payments, services, and users than any other region. For the fee-for-service claims of HMOs, by contrast, the largest single region is the National Capital area.

The reported data also embody large differences in service mix. The ratio of total RVUs to total services gives an estimate of the intensity of the average service reported in an area. Lab tests, routine office visits, and minor procedures have few RVUs per service; major procedures have many RVUs per service. This ratio varies widely among non-HMO claims, HMO fee-for-service claims, and HMO capitated specialty encounters. Within a given plan and reporting type, there may also be substantial variations by region.

Analysis Plan: Payment Rates, Spending, and Volume of Services

The next three chapters of this report analyze three different aspects of the MCDB data: (1) the price level (payment per RVU), (2) the growth in payments for the non-HMO plans, and (3) the growth in service use (total RVUs) for the HMO plans.

Data reporting issues matter least for the analysis of payment per RVU. In general, each individual claim record contains all the data needed to calculate a price for each service. Variations in the total number of claims reported should have only a small effect on estimated price levels. Data that appear grossly inaccurate can be screened out without distorting the estimated payment levels. (Methods used to screen the data are reported in Appendix B.)

Analysis of spending growth for the non-HMO plans will be only moderately affected by reporting variations. In general, the claims data should reflect all care provided by these plans. Compliance with data reporting requirements should be good, as these fee-for-service plans already have claims data for the services provided to their enrollees. Further, the aggregate growth rate shown above appears reasonable, based on totals that payers reported elsewhere.

Analysis of growth of service use in HMO plans is the most problematical. Service use is reported differently for fee-for-service and capitated specialty care. Capitated primary care services are not reported. Payers show large increases in reported service use that almost surely reflect improved reporting between 1999 and 2000. The HMO data will have to be substantially adjusted to account for reporting variation before analyzing trends in volume of care.

3. Payment Rates in Private Plans and Medicare

This section of the report examines private payers' average fee levels relative to the fees paid by Medicare.[13] Medicare's resource-based fee schedule provides a uniform framework for comparing the average level of Medicare and private practitioner fees, both regionally and by type of service.

Private payers' practitioner fees in Maryland are, on average, only slightly higher than the rates paid by Medicare. This could be expected for the HMO payers, based on previous published studies, but was not expected for the non-HMO plans. There is almost no difference in the average fees paid by non-HMO plans and the fee-for-service claims paid by HMOs. In both cases, the relative fee levels vary substantially across categories of service, and fee levels are similar only in the sense that the weighted average of fees is similar across the payers.

Overview of Methods and Prior Studies of Medicare and Private Fees

The Medicare program provides a convenient national and local reference for prices for practitioners' services. Medicare is a large purchaser of practitioners' services in all geographic areas, and accounts for between one-quarter and one-half of revenue for most specialties.[14] Medicare's fees are public information and have become the most common benchmark against which private payers' fees are compared.

Medicare's rates do not reflect physicians' charges or local market forces, but instead are based on estimates of the average level of resources used to provide care. For each service, Medicare establishes a relative value unit that should, in theory, reflect both the practitioner's work required to provide the service and some rational allocation of

[13] Throughout this report, the terms "fee" and "payment per service" mean the total payment physicians receive for care, including payments from the insurer and any deductible, coinsurance, and balance billing amounts (for non-participating physicians) paid directly by the patient.
[14] Medicare's share of practice revenue is substantially below 25 percent only for obstetrics, pediatrics, and psychiatry. See *Physician Marketplace Statistics 1997/1998*, ML Gonzalez and P Zhang, Editors (Chicago: American Medical Association Center for Health Policy Research, 1998).

overhead or practice costs. Across geographic areas, Medicare adjusts fees to account for differences in the cost of running a practitioner office, as well as for differences in the cost of living. The result is a resource-based relative value scale, where differences in payment across services reflect an estimate of differences in the average cost (or resources) used to provide each service.

Once Medicare has set both the RVUs for each service and the geographic adjustment factors, the level of payments is characterized by a single number – the conversion factor. The conversion factor gives the dollar worth of each unit on the relative value scale. A conversion factor of $36.61 means that Medicare would pay that much for service of average difficulty (1.0 RVUs) delivered in an area with average costs (geographic adjustment of 1.0).

Medicare takes that calculation forward from RVUs and conversion factor to payments. This analysis, by contrast, works backward from private payers' services and payments to calculate average payment per RVU. Medicare RVUs were attached to each private claim, and RVUs and payments were summed for each payer and service. The resulting average payment per RVU can be directly compared to the Medicare conversion factor.[15]

Few published studies have attempted a systematic comparison between Medicare's physician payment rates and those of the typical or average private insurer. A summary of this subject relies on studies published intermittently by government, academic, and commercial sources.

Historically, compared to all private payers nationwide, Medicare's fees were well below the estimated average of private insurers' rates. A 1996 estimate showed Medicare rates at 71 percent of the average of all private payers nationwide, with the gap between Medicare and private rates shrinking.[16] An earlier study placed Medicare rates at 76 percent of the rates paid by two large national preferred provider organization (PPO) plans.[17]

Comparisons between Medicare rates and HMO rates have shown a much smaller difference in fee levels. A survey-based estimate by Milliman and Robertson showed HMO physician rates in 2000 averaging 15 percent more than Medicare's rates, down

[15] Another way to state this is the following: If private insurers switched from their current rates to rates based on Medicare RVUs and set their conversion factor equal to this calculated payment per RVU, total payments under the RVU-based rates would exactly equal total payments under their current rates.
[16] Physician Payment Review Commission, *Annual Report to the Congress, 1996*, Chapter 12, page 218 (Washington, DC: PPRC, 1996).
[17] Miller ME, Zuckerman S, Gates M. "How do Medicare physician fees compare with private payers?". *Health Care Financing Review*. 1993 Spring;14(3):25-39.

slightly from the previous year, but similar to the estimated difference based on a 1997 survey by the same firm.[18]

There are large geographic differences in the gap between Medicare's and private payers' fees. A 1997 Milliman and Robertson survey found that Maryland HMOs' physician fees were just 9 percent higher than Medicare's rates, versus a national average of 15 percent. In that survey, only two states (Florida and California) had lower HMO rates (relative to Medicare) than did Maryland.[19] Although most payers appear to pay above the Medicare level, there is no particular barrier to paying average rates below Medicare's rates. A 1994 survey of managed-care plans found no plans paying rates that were systematically below Medicare's level, but occasional news stories in the trade press document recent moves by major insurers in Florida and Arizona to reduce average physician payment rates below Medicare levels.[20]

Finally, the gap between typical private rates and Medicare rates varies substantially by type of service. Early estimates from the Medicare Fee Schedule placed Medicare rates at about 93 percent of private rates for visits and 50 percent of private rates for surgery, based on data from two large national PPOs.[21] Others estimated qualitatively similar payment differentials by type of service soon after the introduction of the Medicare Fee Schedule.[22] The fee differentials by type of service largely reflect ongoing Medicare policy changes that have increased payments for evaluation and management services and reduced payments for procedures and tests.

PAYMENT RATES

Table 3-1 shows the difference between private fee levels and Medicare rates for 2000, for both non-HMO plans and the fee-for-service claims of HMO plans. The analysis of prices produces several interesting findings.

First, averaged across all areas and claims, private payers in Maryland pay practitioner fees that are only slightly higher than Medicare's rates. The estimated total payment per RVU for non-HMO plans is just 4 percent above the Medicare level, and payment per RVU for fee-for-service claims of HMOs is just 5 percent above the Medicare level.

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[18] "Physician Reimbursement Rises More from HCFA than from Plans". *Capitation Management Report*. 2001 March;8(3):43-44.
[19] Crane, M. "How Low Can Fees Go?". *Medical Economics*. 1997 April 7: 26 ff.
[20] Gold M, Hurley R, et al. "Arrangements Between Managed Care Plans and Physicians." Project Report, February 7, 1995 (Washington, DC: Mathematica Policy Research); Jacob J. "Arizona Physicians Challenge Cigna Fee Cuts". *American Medical News*, March 15, 1999; Jackson C. "Aetna's New Fee Schedule Bad News for Fla. Doctors". *American Medical News*, August 20, 2001.
[21] Miller et al, ibid.
[22] Physician Payment Review Commission, *Annual Report to the Congress, 1995*, Chapter 4, page 85 (Washington, DC: PPRC, 1995).

Given the uncertainties in processing and pricing the claims data, these findings are best interpreted as showing that private payers' rates are near the Medicare level.

Table 3-1: Payment Rates for Private Non-HMO and HMO Fee-for-Service Claims versus Medicare, 2000

	Medicare	Non-HMO Plans			HMO Plans		
	Payment per RVU	% of Payments	Payment per RVU	% Diff from Medicare	% of Payments	Payment per RVU	% Diff from Medicare
Total	$37.12	100%	$38.70	4%	100%	$39.08	5%
Region							
National Capital Area	$38.67	30	$42.90	11	43	$39.83	3
Baltimore Metro Area	36.74	50	36.47	-1	37	38.35	4
Eastern Shore	35.76	6	39.71	11	6	39.50	10
Southern Maryland	36.34	6	37.57	3	6	40.67	12
Western Maryland	36.92	8	39.37	7	7	37.09	0
Type of Service							
Evaluation and Management	a	42	$34.33	-8	40	$33.31	-10
Procedures	a	29	45.63	23	34	48.40	30
Imaging	a	14	39.42	6	12	38.18	3
Tests	a	10	43.05	16	7	43.10	16
Childhood Immunizations	a	1	45.64	23	1	37.12	0
Other/Not Grouped	a	4	35.58	-4	5	39.83	7
Place of Service							
Inpatient	a	12	$47.86	29	14	$56.74	53
Outpatient	a	16	47.79	29	14	56.80	53
Office	a	66	35.39	-5	67	34.40	-7
Other	a	5	44.57	20	5	43.91	18
Physician Participation							
Participating	a	80	$36.41	-2	88	$38.55	4
Nonparticipating	a	13	58.25	57	9	46.30	25
Unknown Status	a	7	43.62	18	3	37.17	0

Note: An "a" means that the State average Medicare payment per RVU is assumed for these calculations.

Second, there is little difference in the average price levels of Maryland HMO and non-HMO fee-for-service claims. While payment per RVU for HMO fee-for-service claims is slightly higher than that of non-HMO plans, given the uncertainties of the analysis, the most reasonable conclusion is that they have approximately the same average price level.

Third, private rates are lower than Medicare rates for evaluation and management services, but substantially higher than Medicare for procedures and tests. On net, the average rates are close to Medicare's rates only because evaluation and management services constitute such a large fraction of all privately paid care. These pricing

differences by type of service are consistent with the changes that Medicare made in its fee structure when converting from charge-based rates to the Medicare Fee Schedule. Medicare payments for evaluation and management care have risen sharply, while payments for most procedures and tests have fallen.

Fourth, the payment differential is most striking when claims are separated by place of service. For hospital inpatient and outpatient care (including emergency room care), private payers' rates run 30 to 50 percent above the Medicare level. HMOs in particular pay a substantial premium for their facility-based care paid on a fee-for-service basis, with rates more than 50 percent above the Medicare level. These high rates are balanced, however, by generally below-Medicare rates paid for in-office care, and the high proportion of all care provided in practitioner offices.

Fifth, non-HMO payment rates in the Baltimore area are substantially lower than in the National Capital area. On average, the Baltimore payment per RVU is just 85 percent of the rate paid in the National Capital area. Across payers, there appears to be only a modest correlation in the geographic difference in payment rates. All payers offer relatively high rates in the National Capital area. Beyond that, there does not appear to be much similarity in private payers' average rates across areas.

Finally, payments to nonparticipating physicians boost the overall estimated payment rate, particularly for the non-HMO plans. Many payers report total payments for nonparticipating physicians that are similar to billed charges. The bottom section of Table 3-1 shows payment rates separately for participating and nonparticipating physicians. For non-HMO plans, payment per RVU for participating physicians is 2 percent below the Medicare level, while for the HMO plans, payment to participating physicians is 4 percent above the Medicare level.

Selected Payment Rates Adjusted for Case-Mix and Other Factors

The average payment per RVU is influenced by many factors, including the mix of services, geographic areas, and payers. This section takes two results from the previous section and statistically adjusts the data to give comparisons holding payer, geography, and service mix constant.[23] These adjustments do not substantially alter the findings of the previous section.

First, data from the prior section show that HMO plans (for their fee-for-service claims) pay slightly more per RVU than do the non-HMO plans, on average. After accounting

for geographic area and case mix, the rates paid by the HMO plans (for their fee-for-service claims) are just slightly below the rates paid by non-HMO plans (Table 3-2).

Table 3-2: Payment per RVU in HMO and Non-HMO Plans, Before and After Adjustment for Geographic Mix and Case Mix

	UNADJUSTED	ADJUSTED
Non-HMO plans	$38.70	$39.30
HMO plans	39.08	38.10
Difference (percent)	1%	-3%

Second, for the non-HMO plans, there was a large difference in payment per RVU between the National Capital and Baltimore areas. Unadjusted, the Baltimore rate was 15 percent below the National Capital area rate. Six percentage points of that differential, however, can be attributed to the mix of plans in the two areas (Table 3-3). Baltimore is served disproportionately by plans that pay low rates in all geographic locations. Holding the mix of plans and services constant, payment rates in the Baltimore area average 9 percent below those in the National Capital area. (For Medicare, by contrast, the average payment difference is 5 percent.)

Table 3-3: Payment per RVU in Non-HMO Plans, Baltimore Area Compared to National Capital Area, Before and After Adjustment for Payer Mix and Case Mix

	UNADJUSTED	ADJUSTED
National Capital Area	$42.90	$40.94
Baltimore Metro Area	36.47	37.42
Difference (percent)	-15%	-9%

[23] Details of the adjustment method are given in Appendix B.

4. Spending Trends for Non-HMO Plans

This section looks at the changes in spending, fees, and volume of care between 1999 and 2000 for insurers other than HMOs. While Chapter 2 outlined the spending increases, this chapter looks at the spending changes in more detail and analyzes changes in fees, persons, and volume of care.

Practitioner fee increases did not contribute to the high rate of growth in practitioner spending between 1999 and 2000. Instead, there was a substantially higher volume of practitioner care provided in 2000. The data as reported suggest that the principal driver was an increase in the number of persons using services, and that increased use of care per person was the secondary cause of the increase.

The detailed analysis revealed the following differences:

- Spending grew somewhat faster in hospital outpatient departments than in other sites of service.
- Spending growth for infants was low, suggesting a possible shift of enrollment mix between non-HMO and HMO plans. Reported spending for pediatric immunizations declined, continuing a trend noted in last year's Practitioner Report.
- There was shift in spending from employer fully insured plans toward employer self-insured plans.
- By type of service, spending for imaging services grew substantially faster than spending for other types of care.

Data and Methods

The analysis presented in this section is based on summing of payments and RVUs across MCDB claims for the non-HMO plans. The growth in total spending is broken out into different components, showing the relative importance of changes in persons using care, number and intensity of services per user, and price per service in determining overall spending growth.

The following formula is used to decompose total spending (and changes in total spending) into components:

Total payment = (payments/RVU)*users*(services/user)*(RVUs/service)

The product of the year-to-year changes in the four factors is the year-to-year change in total payment. For example, a 10 percent increase in payment might be due to no change in prices (payments/RVU), an 8 percent increase in users, no change in services per user, and a 2 percent increase in intensity (RVUs/service):

1.10 = 1.00 * 1.08 * 1.00 * 1.02

Taken together, these factors show how rapidly spending was changing and whether that growth was due to changes in fees or volume of care, and within volume of care, whether that was due to more patients seen or to a higher number and intensity of services provided to each patient. For readability, the changes are shown in Table 4-1 as percentages rather than ratios (e.g., 8% rather than 1.08). For small changes, the percentage as shown will add to the total (except for rounding error). For large changes, the percentages will add to less than the total because the correct formula (above) is multiplicative.

SPENDING TRENDS

Table 4-1 shows the change in spending from 1999 to 2000 classified in a variety of ways. The three left-most columns of data give the 2000 level of spending, users, and payment per RVU in 2000. The middle two columns show each category's contribution to total payments and to total payment growth. Within each classification of the data, these numbers will add to 100 percent. The five columns on the right show spending growth and decompose that spending growth into the change in prices (payments per RVU), number of persons served, and the number and intensity of services per person (services per person and RVUs per service) as described in "Data and Methods." Discussions of the data for the individual cross-classifications are given below.

Total. In aggregate, practitioner spending by non-HMO plans rose about 10 percent. The average value of fees – payments per relative value unit – was unchanged. This continues a trend noted in last year's Practitioner Report where fees appeared to fall

Table 4-1: Decomposing the Annual Change in Payments to Non-HMO Plans into Change in Payment per RVU, Number of Users, Services per User, and RVUs per Service

CLASSIFICATION	2000 DATA			PERCENT OF:		PERCENT CHANGE, 1999 - 2000				
	Payments ($millions)	Users (000s)	Payment per RVU	Total Payments	Payment Growth 1999-2000	Payments	Payment Per RVU	Users	Service per User	RVUs per Service
Total	$889	1,168	$38.70	100%	100%	10%	0%	8%	0%	2%
Region										
National Capital Area	$269	310	$42.90	30	24	8	-1	6	0	3
Baltimore Metro Area	447	601	36.47	50	49	10	0	8	0	2
Eastern Shore	52	76	39.71	6	9	18	2	10	3	2
Southern Maryland	50	72	37.57	6	7	13	0	8	1	3
Western Maryland	71	109	39.37	8	11	15	-1	12	4	0
Age										
<1 year	$14	16	$39.78	2	1	4	1	0	7	-4
1-17	110	291	35.79	12	13	11	2	8	1	0
18-34	153	247	39.22	17	10	6	-2	8	-1	1
35-54	405	452	38.81	46	55	13	-1	9	1	2
55-64	207	162	39.72	23	22	10	0	6	-1	4
Place of Service										
Inpatient	$110	79	$47.86	12	8	6	-1	8	-2	2
Outpatient	144	491	47.79	16	22	15	0	14	-1	2
Office	587	1,105	35.39	66	65	10	0	8	0	2
Other	47	227	44.57	5	6	11	-4	10	-3	8
Coverage Type										
Individual Plan	$56	78	$39.78	6	10	18	0	11	3	2
Employer–Self Insured	250	333	42.18	28	38	15	-1	13	0	2
Employer–Insured	108	162	40.66	12	-9	-6	-4	-4	0	1
Public Employee	336	398	36.78	38	45	13	1	9	0	3
CSHBP	135	202	35.91	15	15	10	0	9	-1	1
Taft-Hartley Trust	5	3	46.03	1	1	31	1	-3	24	8
Type of Service, Aggregate										
Evaluation/Management	$375	1,107	$34.33	42	36	9	0	8	-1	1
Procedures	256	402	45.63	29	27	10	-2	8	6	-2
Imaging	123	479	39.42	14	22	18	-1	12	3	4
Tests	89	735	43.05	10	7	7	-3	9	-4	5
Childhood Immunizations	7	90	45.64	1	0	-2	1	-4	7	-5
Other/not grouped	39	146	35.58	4	8	22	6	56	-20	-8
Type of Service, Detailed										
Imaging, standard	$43	400	$38.79	5	7	16	-1	11	1	3
Imaging (CT, MRI)	45	99	37.44	5	10	23	0	21	0	1
Imaging, echography	32	145	41.88	4	5	14	-3	14	2	1
Imaging, procedure	3	12	$60.82	0	1	20	-3	19	-2	7
Visits, office/outpatient	202	1,039	30.78	23	17	8	0	8	-1	1
Visits, inpatient	24	42	46.04	3	1	4	-1	-1	8	-2
Visits, ER	22	158	50.24	2	4	18	0	14	1	3
Visits, home	$1	2	56.44	0	1	-----	-----	-----	-----	-----
Visits, specialist	87	295	38.57	10	7	7	2	6	0	0
Visits, consultation	39	220	34.55	4	6	14	0	14	0	1

CLASSIFICATION	2000 DATA			PERCENT OF:		PERCENT CHANGE, 1999 - 2000				
	Payments ($millions)	Users (000s)	Payment per RVU	Total Payments	Payment Growth 1999-2000	Payments	Payment Per RVU	Users	Service per User	RVUs per Service
Immunizations, drugs, other	40	172	35.72	5	5	11	3	1	8	0
Major procedures, other	55	38	46.72	6	3	4	-3	5	1	1
Major procedures, cardiac	13	10	50.40	1	2	13	0	13	-3	3
Major procedures, orthopedic	13	8	45.42	1	2	19	-2	17	4	-1
Eye procedures	8	8	48.47	1	0	1	-5	38	-6	-19
Ambulatory procedures	37	99	45.99	4	7	20	0	14	-5	10
Minor procedures	80	290	41.14	9	11	12	0	6	9	-2
Oncology services	8	3	51.30	1	1	16	-2	2	9	7
Endoscopies	40	83	51.66	4	1	1	-3	4	1	0
Dialysis	1	1	42.94	0	0	20	-3	-4	5	22
Lab tests	65	682	41.81	7	4	6	-3	9	-4	5
Tests (exc lab tests)	24	239	46.77	3	3	10	-3	12	-2	3
Practitioner Specialty										
Radiology	$81	363	$38.01	9	17	21	0	17	1	4
Obstetrics/Gynecology	64	228	38.02	7	5	8	-1	8	-1	2
Internal Medicine	63	289	36.32	7	11	16	0	14	-3	4
Pediatrics	48	224	32.48	5	7	13	0	15	0	-1
Independent Lab	44	438	40.83	5	3	6	-3	9	-6	6
GP/FP	33	210	33.30	4	5	15	-2	16	-1	1
Orthopedic Surgery	32	85	38.65	4	9	29	-1	19	5	4
Cardiology	28	56	39.55	3	6	20	-2	21	-9	12
Chiropractor	26	37	33.29	3	3	10	-2	10	1	1
General Surgery	21	51	42.81	2	3	14	-1	13	2	0
Ophthalmology	18	88	36.55	2	1	4	-2	6	3	-3
Emergency Medicine	18	132	43.73	2	5	30	3	24	1	-1
Dermatology	17	119	34.42	2	2	11	1	10	-2	2
Psychologist	17	19	36.94	2	0	2	-1	4	-1	0
Gastroenterology	16	45	43.49	2	4	26	0	22	-6	9
Psychiatry	15	23	43.93	2	1	9	4	15	-10	0
Pathology	15	125	49.66	2	4	29	-1	31	8	-8
Oncology	15	11	37.07	2	1	3	8	20	-24	6
Oto/Laryngo/Rhino/	14	50	39.73	2	1	6	-2	6	-2	3

Note: Small categories and missing services are omitted from detailed type of procedure categories. Only specialties that account for a significant fraction of spending are shown. CSHBP is Comprehensive Standard Health Benefit Plan.
Note: A "-----" signifies too few observations for a stable estimate.

slightly between 1998 and 1999. *This does not necessarily mean that all insurers were holding fees constant.* Instead, the average payment per RVU reflects many influences, including insurers' fee changes, shifts in enrollment among high- and low-paying insurers, changes in service mix, and changes in the geographic distribution of enrollees.

In aggregate, all of the spending increase was due to an increased volume of care, not price per service. Based on the data reported in the MCDB, the main driver of that increased volume for non-HMO plans was an increase in the number of users, followed by an increase in the average intensity of services provided.

Interpretation of these numbers is subject to the substantial caveat regarding the count of users. While reported service users increased 8 percent, reported non-HMO enrollment increased just 3.1 percent.[24] The user count may reflect changes in payers' reporting practices and is influenced by the proportion of individuals switching insurance coverage in mid-year. Thus, while the number of service users probably grew somewhat due to the increased plan enrollment, the actual increase in service users may not be quite as large as is shown in Table 4-1.

Region. Spending growth by non-HMO plans was substantially lower in the National Capital area than in other parts of the state. In part, this reflects changes in enrollment, as this was the only area of the state showing an increase in private HMO enrollment in 2000 and a reduction in private non-HMO enrollment.[25] The Baltimore area, by contrast, accounted for 49 percent of overall spending growth for non-HMO plans, mainly because this area has a large non-HMO enrollment. Based on the reported data, that spending growth was due mainly to an increased number of persons using care.

Age. The data by age show little spending growth for infants, slow growth in spending for those in peak childbearing years (18-35), and higher growth elsewhere. This suggests that the demographics of the non-HMO population may have shifted away from young families between 1999 and 2000. Correlated with this, payment growth for OB/GYNs was among the slowest of all the major specialties.

Place of service. Spending and service use grew somewhat faster in hospital outpatient departments, particularly emergency rooms, and slower in other sites of care. The high rate of growth in this setting is consistent with above-average rates of increase in facility payments to hospital outpatient departments reported in the Maryland SHEA.[26] As with the other analyses, spending is driven by volume of care, and the main

[24] MHCC, ibid.
[25] MHCC, ibid.
[26] MHCC, ibid.

driver of volume is an apparent increase in the number of enrollees of non-HMO plans using at least some hospital outpatient department or emergency room care in 2000.

Coverage type. Among employer-sponsored coverage, the data suggest that there was a substantial shift from fully insured to self-insured coverage in 2000. That is consistent with national trends toward self-insured plans, a phenomenon that occurs whenever health care costs and premiums are rising.[27]

Aggregate type of service. Imaging services were by far the most rapidly growing aggregate category of care (other than miscellaneous/unclassified services), with a spending increase of 18 percent from 1999 to 2000. Two low-growth areas are evident. Spending growth for tests was far slower than spending for most other services, and reported spending for childhood immunizations actually fell between 1999 and 2000. The decline in reported immunizations follows a trend noted in last year's Practitioner Report, but there is no apparent technical explanation for the decline.[28]

Detailed type of service. All of the categories of imaging grew at above-average rates led by rapid growth in advanced imaging techniques such as computerized tomography (CT) and magnetic resonance imaging (MRI) scans.

Within the visit category, emergency room (ER) visits grew faster than any other type of visit service. It is difficult to understand why ER visits would grow rapidly for this population with mainstream fee-for-service health insurance. One possibility may be that the growth in ER visits actually reflects a shift in site of care. For example, reduced availability of urgent-care facilities might result in increased use of ERs. That possible explanation was not tested empirically with these data.

The visit data also show an interesting contrast in pricing policies. Office visits had one of the lowest payments per RVU of all service types shown, while inpatient visits and particularly ER visits had substantially higher average payment per RVU.
A second interesting contrast is among the various categories of procedures. Use of orthopedic procedures grew rapidly, major cardiac procedures less so. Both ambulatory procedures and minor procedures grew at above-average rates.

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[27] Levit L, Gabel J, et al. *Employer Health Benefits 2001,* (Menlo Park, CA, and Chicago, IL: Kaiser Family Foundation and the Health Research and Education Trust, 2001).
[28] Several factors might plausibly be affecting the reported use of pediatric vaccinations, but could not be directly identified in these data. Free government-supplied vaccine is available for uninsured and publicly insured children, but not for those with private insurance. Nevertheless, the widespread availability of free vaccine may have resulted in some unintentional spillover to the population of privately insured children included here. In addition, vaccines provided in hospital outpatient departments may not generate a practitioner bill for the vaccine (and instead may generate a facility bill for the vaccine). Increased use of outpatient departments may reduce the number of practitioner bills seen for vaccination services.

In general, payment per RVU fell slightly for most procedure categories. This may reflect a continuing influence of the Medicare Fee Schedule on private payers, as Medicare rates are substantially below private rates for most procedure categories.

Specialty. Growth in payments by specialty mirrors the results by type of service. Radiologists, orthopedic surgeons, cardiologists, and emergency medicine physicians were among the fastest-growing specialties. OB/GYNs were among the slowest growing.

Difference in payment rates (payments/RVU) are not as stark when examined by specialty as they are when examined by type of service. Most practitioners provide a variety of services, including a mix of evaluation and management services, procedures, and tests. As a rule, those specialties mainly providing office visits will appear with low payment per RVU in Table 4-1. So, for example, pediatricians and general and family practice physicians are among the most "poorly paid" specialties, where the Medicare Fee Schedule RVUs are used as the basis for comparing payment levels across specialties.[29]

[29] The apparent high payment per RVU for pathology and clinical lab services may be, in part, an artifact of common coding practices for these services. Practitioners often code multiple units of service (many therapy sessions, specimens, or tests) on a single line of a claim. Processing of the data may not have removed all of these multi-item payments from the claims.

5. Volume of Service Trends for HMO Plans

This section looks at trends in volume of care in the HMO plans. Technical factors make it difficult to interpret the HMO data precisely. Not only does growth in *reported* services reflect continuing improvements in the amount and quality of data, but changes in plans' contractual arrangements may shift data among plan types and reporting categories.[30]

Although the HMO data are substantially harder to interpret due to reporting issues, many of the factors driving spending trends for the non-HMO plans also appear to drive trends in service use for the HMO plans. After adjusting the data to account for some of the variation in reporting, the data suggest that:

- Service growth was fastest in hospital outpatient departments.
- Imaging was the fastest-growing type of service, led by advanced imaging such as CT and MRI scans. Radiologists were among the specialties with the fastest-growing volume of care.
- The reported volume of pediatric immunizations fell, continuing a trend noted in the 1999 Practitioner Report.
- Employer-sponsored self-funded plans grew at the expense of employer-sponsored, fully insured plans.
- Service use by infants and services provided by obstetricians grew much more rapidly in HMO than in non-HMO plans. This could reflect either an artifact of data reporting or a true shift in patient mix between HMOs and non-HMO plans.

Data and Methods

Trend data for the HMO plans is substantially more difficult to analyze than trend data for the non-HMO insurers. For the non-HMO plans, claims data capture essentially all care (other than services covered by carve-out plans). For the HMO plans, by contrast,

[30] For example, the decision to move from capitated primary care to fee-for-service arrangements would increase the volume of care captured in the MCDB.

not only do the encounters capture only some variable fraction of care by plan, but the quality of reporting for individual data elements is substantially less reliable than for the non-HMO plans.

Two significant adjustments were made to the HMO data. First, laboratory tests were dropped from the data set. These services often have a completely different (and typically fully electronic) method of reporting within a plan. They account for a large portion of all submitted HMO data and grew rapidly between 1999 and 2000. Growth in that category almost undoubtedly reflects data collection and reporting practices, not actual growth in underlying service provision.

Second, the data were adjusted so that no one plan dominated the data on service growth. Data from the HMO plans had two significant defects: plans exhibited widely varying growth in reported service volume (due mainly to improved completeness of data reporting in 2000) and often had idiosyncratic methods for coding individual fields.[31] Unadjusted, these reporting variations overwhelm underlying true changes in service use. To reduce the impact of these reporting variations, each plan's 1999 claims or encounters were inflated or deflated so that total RVUs for each plan grew exactly 10 percent between 1999 and 2000.[32] This removes all the variation in growth across plans, and only allows the variation across service categories within each plan to affect the final results.

GROWTH IN RVUS BY TYPE AND PLACE OF SERVICE

This section tabulates RVUs for services reported by the HMO plans, combining both capitated specialty care and fee-for-service claims (Table 5-1). For reference, spending data for the non-HMO plans is reported alongside the HMO service (RVU) information. The section discusses the similarities and differences between the HMO service growth and non-HMO spending growth.

Region. The reported HMO service data show implausible patterns by region even after adjustment. These differences, almost certainly, are an artifact of changes in data reporting and do not correlate well with regional enrollment growth reported in the Maryland SHEA. Compared to the other analyses below, the regional analysis reflects relatively little pooling of data across insurers and results appear to reflect changes in individual insurers' data reporting practices.

Table 5-1: Growth in RVUs for HMO Plans Contrasted with Spending Growth for Non-HMO Plans

[31] For example, one plan might code place of service exactly, another might code "other" for half the records. Physician specialty codes, in particular, were often reported as "group practice" or "unknown."
[32] The 10 percent figure was arbitrary and chosen to resemble the aggregate for the non-HMO plans. Plans not present in both years were dropped from the analysis.

CLASSIFICATION	HMO PLANS, RVUs			NON-HMO PLANS, $$$	
	2000 RVUs,	% of 2000 RVUs	Growth, 1999-2000	% of Total	Growth, 1999-2000
Total	13,807	100%	10%	100%	10%
Region					
National Capital Area	4,957	36	16	30	8
Baltimore Metro Area	5,875	43	3	50	10
Eastern Shore	1,094	8	0	6	18
Southern Maryland	777	6	42	6	13
Western Maryland	1,104	8	15	8	15
Age					
<1 year	277	2	16	2	4
1-17	2,217	16	6	12	11
18-34	2,915	21	3	17	6
35-54	6,089	44	14	46	13
55-64	2,307	17	12	23	10
Place of Service					
Inpatient	1,350	10	12	12	6
Outpatient	1,310	9	24	16	15
Office	10,501	76	8	66	10
Other	647	5	13	5	11
Coverage Type					
Individual Plan	1,335	10	43	6	18
Employer–Self-Insured	1,993	14	17	28	15
Employer–Insured	6,040	44	-2	12	-6
Public Employee	2,640	19	31	38	13
CSHBP	1,786	13	4	15	10
Type of Service, Aggregate					
Evaluation/Management	6,967	50	6	42	9
Procedures	3,509	25	9	29	10
Imaging	1,823	13	24	14	18
Tests	379	3	17	10	7
Childhood Immunizations	179	1	-7	1	-2
Other/not grouped	949	7	22	4	22
Type of Service, Detailed					
Imaging, standard	609	4	18	5	16
Imaging (CT, MRI)	655	5	36	5	23
Imaging, echography	530	4	17	4	14
Imaging, procedure	30	0	19	0	20
Visits, office/outpatient	3,975	29	4	23	8
Visits, inpatient	353	3	29	3	4
Visits, ER	421	3	26	2	18
Visits, home	10	0	-----	0	-----
Visits, specialist	1,129	8	0	10	7
Visits, consultation	1,079	8	12	4	14
Immunizations, drugs, other	992	7	13	5	11
Major procedures, other	1,049	8	2	6	4

CLASSIFICATION	HMO PLANS, RVUs			NON-HMO PLANS, $$$	
	2000 RVUs,	% of 2000 RVUs	Growth, 1999-2000	% of Total	Growth, 1999-2000
Major procedures, cardiac	167	1	28	1	13
Major procedures, orthopedic	134	1	-1	1	19
Eye procedures	98	1	-6	1	1
Ambulatory procedures	524	4	21	4	20
Minor procedures	862	6	13	9	12
Oncology services	109	1	6	1	16
Endoscopies	536	4	5	4	1
Dialysis	28	0	-----	0	-----
Tests (exc lab tests)	379	3	17	3	10
Practitioner Specialty					
Obstetrics/Gynecology	1,202	9	16	7	8
Family Practice	819	6	18	4	15
Pediatrics	803	6	16	5	13
Radiology	774	6	26	9	21
General Surgery	690	5	14	2	14
Internal Medicine	675	5	14	7	16
Cardiology	501	4	28	3	20
Orthopedic Surgery	485	4	21	4	29
Emergency Medicine	298	2	22	2	30
Gastroenterology	274	2	37	2	26
Oncology	266	2	11	2	3
Otolo/Laryngo/Rhino	260	2	14	2	6
Dermatology	245	2	10	2	11
Ophthalmology	243	2	9	2	4

Note: About one-quarter of HMO RVUs were on records with undetermined, miscellaneous, or group practice/clinic specialty. CSHBP is Comprehensive Standard Health Benefit Plan.
Note: A "-----" signifies too few observations for a stable estimate.

Age. Compared to the non-HMO plans, younger patients account for a somewhat larger share of services in the HMO plans. HMOs reported a sharp 16 percent increase in services to infants (under one year old). That appears to be corroborated by the specialty data presented in Table 4-1, where obstetricians are the largest separately identified specialty, and where obstetrical care grew at an above-average rate. This contrasts with the non-HMO plans, where spending for infants fell slightly and spending growth for obstetricians was below average.

Place of Service. For HMOs, services grew fastest in the hospital outpatient departments with a reported increase of 24 percent. HMO and non-HMO plans differed significantly in terms of hospital inpatient care. For the HMO plans, RVUs provided in the inpatient setting grew faster than the overall average, while for non-HMOs, inpatient spending growth was below average. This is mirrored in the detailed type of service data provided in Table 5-1, where inpatient visits grew rapidly for the

HMO plans but were among the slowest-growing categories of service for the non-HMO plans.

Coverage type. Both the HMO and non-HMO service use suggests self-insured, employer-sponsored coverage was growing at the expense of fully insured products.[33] For the HMO plans, total RVUs for fully insured products fell by 2 percent between 1999 and 2000. The HMO data also suggest rapid growth in service use for persons with individually purchased HMO coverage, again matching a finding of rapid spending growth in that category for the non-HMO plans.

Employers' shift toward self-insured products may differentially affect the HMO plans in Maryland. In 2000, 44 percent of reported HMO care was for persons in such plans versus just 12 percent of spending for the non-HMO plans.

Aggregate type of service. The HMO and non-HMO plans show a similar pattern of growth by aggregate type of service. In both cases, imaging was the fastest growing service category, and radiology was among the fastest-growing specialties in terms of RVUs or payments. For both types of plan, pediatric vaccinations recorded in the MCDB fell.

Detailed type of service. The detailed type-of-service data provide a few interesting comparisons between service growth for the HMO plans and spending growth for the non-HMO plans. First, imaging services of all sorts grew at above-average rates for both HMOs and non-HMOs. For both types of plans, the advanced imaging (CT scans and MRI scans) was the fastest-growing imaging category.

Second, for visit services, the only point of disagreement between the HMO and non-HMO data is for inpatient visits. For both types of plans, office visits and specialist visits grew slowly, while ER visits grew rapidly. For the HMOs, the volume of care for inpatient visits grew rapidly, while inpatient visits were among the slowest-growing services for the non-HMO plans.

Third, for major and minor procedures, both types of plans saw high volume growth for ambulatory procedures and low growth for major procedures (other than cardiac or orthopedic surgery), for eye procedures, and for endoscopies. HMOs had high reported growth in major cardiac procedures, while non-HMOs had high reported growth for both major cardiac and major orthopedic procedures. That difference is echoed in the specialty data, where reported service volume for cardiologists increased 28 percent for

[33] Maryland HMOs cannot directly offer self-insurance products to employers, but can contract with employers to allow provision of care through the HMO's network of providers.

the HMO plans, and reported spending for orthopedic specialists increased 21 percent in the non-HMO plans.

Specialty. For the HMO plans, about one-quarter of RVUs were not assigned to a specific individual specialty. The specialty data should be interpreted with caution. The generally high rates of growth for the listed specialties reflect, in part, the reduction in this "unknown specialty" category in 2000. Nevertheless, data for the most common specialties are in agreement with the type of service data. Among the specialties accounting for large fractions of HMO RVUs, radiologists and cardiologists had the highest service growth and, therefore, are a reasonably good match for the type-of-service data discussed above.

6. Summary and Conclusions

This section of the report briefly lists the main findings of the analysis of the 1999 and 2000 MCDB data.

- Practitioner spending for non-HMO payers increased by 10 percent from 1999 to 2000. The increase was driven entirely by a higher volume of care and appeared in these data mainly as an increase in the number of persons using care. Average fees did not change from 1999 to 2000. By site of service, spending growth was highest in hospital outpatient departments and emergency rooms. Imaging services rose faster than any other major category, and radiology was among the fastest-growing specialties. Among private employers, there was a pronounced shift toward self-funded plans and away from fully insured plans.

- Reported practitioner spending by HMO payers rose sharply. Given the modest reductions in private HMO enrollment in 2000, this probably reflects, to a large degree, more complete data reporting by these plans rather than increases in both fee-for-service and capitated care. After adjustment to account for variations in data reporting, the HMO data showed many of the same patterns that were evident in the non-HMO claims data. These included faster growth in hospital outpatient department services and rapid growth of imaging services.

- On average, private payers' practitioner fees were only modestly higher than Medicare's rates. This reflects below-Medicare rates for evaluation and management services (except ER and inpatient visits) and higher rates for procedures and tests. In addition, rates paid by non-HMO plans were, on average, not significantly different from the fee-for-service payments by HMOs. HMOs paid lower rates for evaluation and management care, but paid high rates for fee-for-service care in hospital inpatient and outpatient settings. This comparison of HMO and non-HMO rates is based only on fee-for-service claims and does not address HMOs' overall rate structure, including rates paid under capitated contracts.

Appendix A

Payers Contributing Data to This Report

Table A-1: Payers Contributing Data To This Report

PAYER NAME	SUBMITTED FOR 1999	SUBMITTED FOR 2000
Aetna Life Insurance Co.	✔	✔
Aetna U.S. Healthcare, Inc.	✔	✔
Allianz Life Insurance Co. of North America	✔	✔
American Republic Insurance Co.	✔	✔
CareFirst BCBS of DC, Inc.	✔	✔
CareFirst BCBS of MD, Inc.	✔	✔
Celtic Life Insurance Co.	✔	-----
CIGNA	✔	✔
Educators Mutual Life Insurance Co.	✔	✔
First Allmerica Financial Life Insurance Co.	✔	-----
Fortis Benefits Insurance Co.	✔	✔
George Washington University Health Plan, Inc.	✔	✔
Golden Rule Insurance Co.	✔	✔
Graphic Arts Benefit Corporation	✔	✔
Great West Life and Annuity Insurance Co.	✔	✔
Guardian Life Insurance Co. of America	✔	✔
Employers Health Insurance Company	✔	✔
UNICARE Life & Health Insurance Co.	✔	✔
Kaiser Foundation Health Plan of the Mid Atlantic States, Inc.	✔	✔
MAMSI Life and Health Insurance Co.	✔	✔
Maryland Fidelity Insurance Co.	✔	✔
MD Individual Practice Association, Inc.	✔	✔
National Group Life Insurance Co.	✔	-----
NYLCARE Health Plans of the Mid Atlantic, Inc.	✔	✔
Optimum Choice, Inc.	✔	✔
PHN HMO, Inc.	✔	✔
Principal Health Care of Delaware, Inc.	✔	✔
Principal Mutual Life Insurance Co.	✔	✔
Prudential Healthcare Plan, Inc.	✔	✔
Prudential Insurance Co. of America	✔	-----
ReliaStar	✔	✔
State Farm Mutual Automobile Insurance Company	-----	✔
United Healthcare TOPS	✔	-----
Trustmark Insurance Co.	✔	✔
Union Labor Life Insurance Co.	✔	✔
Metra Health (United Health Group)	✔	✔
United Healthcare of the Mid Atlantic, Inc.	✔	✔
United Behavioral Health	✔	-----
United Wisconsin Life Insurance Co.	✔	✔

Appendix B

Methods and Technical Notes

Methods and Technical Notes

This appendix briefly explains the methods used to screen and summarize the claims and encounter data submitted by the payers. It also explains key pieces of methodology and presents some sensitivity analysis for the estimated level of private payers' average fees.

Construction of 10 Percent Sample File

All calculations in this report are based on a 10 percent sample of individuals. The encrypted individual identifier supplied by the plans was used to pick the sample. Individuals were chosen based on a random function of the digits of the person's identifier. When an individual was selected for the sample, all records for an individual were taken. Totals calculated from the sample file were multiplied by 10 to estimate totals for the entire file. This sample method gives a reasonably accurate estimate of totals for the entire database (Table B-1).

This approach greatly reduced data processing times and costs without sacrificing accuracy of the aggregate statistics provided in this report. Analyses of more detailed questions – for example, individual counties or specific diagnoses or procedures – would likely require analysis of the full data file, not the sample.

Claims Not Used for the Payment Analysis

The screening of the raw MCDB took place in two steps: the first step eliminated records clearly not relevant to this analysis, and a second screen eliminated records with payment per service data that could not be used to calculate payment levels for the private payers.

The first set of payment screens eliminated records that were outside the scope of this analysis. These included:

- Services not performed in calendar years 1999 or 2000.
- Services not practitioner care (for example, facility bills).
- Services for individuals over age 65.
- Claims where the insurer was a secondary payer.

This reduced the database to the target universe of claims and encounter data that consisted of all practitioner services provided to the under-65 population during the

calendar year in question, where the insurer was the primary insurer responsible for payment of the claim.

Table B-1: Unedited Data, Comparison of Full Database and 10 Percent Sample

	1999			2000		
	MCDB	Sample (10%)	Difference	MCDB	Sample (10%)	Difference
Number of Services (000s)						
Total	54,317	54,268	0.1%	60,615	60,668	-0.1%
National Capital Area	18,673	18,648	0.1	20,416	20,371	0.2
Baltimore Metro Area	25,506	25,532	-0.1	28,669	28,762	-0.3
Eastern Shore	3,228	3,213	0.5	3,602	3,557	1.2
Southern Maryland	2,735	2,757	-0.8	3,300	3,284	0.5
Western Maryland	4,175	4,117	1.4	4,628	4,694	-1.4
Number of Recipients (000s)						
Total	3,317	3,320	-0.1	3,421	3,425	-0.1
National Capital Area	1,078	1,080	-0.2	1,160	1,160	0.0
Baltimore Metro Area	1,553	1,555	-0.1	1,567	1,568	0.0
Eastern Shore	232	230	0.9	229	233	-1.5
Southern Maryland	182	186	-1.9	187	186	0.8
Western Maryland	271	269	0.9	277	278	-0.2
Total Payments ($000s)						
Total	$2,465,592	$2,459,153	0.3	$3,216,938	$3,236,015	-0.6
National Capital Area	872,843	865,001	0.9	1,228,291	1,227,050	0.1
Baltimore Metro Area	1,098,394	1,103,383	-0.5	1,317,089	1,330,233	-1.0
Eastern Shore	149,631	149,798	-0.1	187,175	194,218	-3.8
Southern Maryland	134,543	133,736	0.6	188,815	186,215	1.4
Western Maryland	210,181	207,234	1.4	295,568	298,299	-0.9
Average Payment/Service						
Total	$743	$741	0.4	$940	$945	-0.5
National Capital Area	810	801	1.1	1,059	1,057	0.1
Baltimore Metro Area	707	710	-0.3	840	848	-1.0
Eastern Shore	646	652	-1.0	817	834	-2.2
Southern Maryland	738	720	2.4	1,008	1,002	0.6
Western Maryland	775	772	0.5	1,066	1,074	-0.7

Within this set of claims, other bills were screened out to arrive at only those claims reflecting full payment for well-defined services. In any set of health care claims, a substantial fraction of bills will consist of claims for partial payment of a bill, or for payment of a minor service associated with (and billed under the same CPT code as) a major service. Including such claims in the calculation would give an incorrectly low estimate of private payment per RVU.

These claims for partial payments and minor services must be eliminated before calculating payment per RVU. Claims flagged for elimination from the database included:

- CPT codes outside the range of analysis (for example, codes for dental services), or for which no RVU could be imputed because the procedure code was not recognized as either a standard CPT or HCPCS code, or as a local or "homegrown" code, for which the payer identified the specific service provided.
- Debit-credit pairs (intended to cancel out erroneous bills) and other identified payment adjustment records.
- Claims for which some other insurer was a secondary payer, so that total payment from the primary insurer and beneficiary reported on the claim was substantially less than total allowed charge.
- Claims that did not reflect payment for the physician's service identified by the CPT code on the bill, such as:
    - Practitioner bills that included only a payment for a technical fee, not a professional fee.
    - Claims for assistance at surgery (as opposed to the surgeon's fee).
    - Claims for anesthesia billed under the surgical CPT code.
    - Claims for bilateral procedure, split surgical care, and similar partial- or multi-procedure bills.
- Bills with clearly anomalous payment information or for which no RVU was imputed:
    - Payment less than $1.
    - Zero allowed charge.

Finally, two generic screens were use to capture bills with anomalous payments that were not otherwise identified by the explicit screens:

- Where multiple bills appeared for the same person, provider, date, and CPT code, only the highest-paying bill was kept in the database.
- Bills were dropped if they failed an "outlier" screen, with payment either vastly lower, or vastly higher, than the average payment for all private payers for that CPT code.

All together, the screens removed bills accounting for between 15 and 25 percent of payments (Table B-2).

Table B-2: Percent of Records, Payments, and RVUs Remaining after Data Edits

PAYER	PERCENT OF ORIGINAL FILE KEPT, 1999			PERCENT OF ORIGINAL FILE KEPT, 2000		
	Records	Payments	RVUs	Records	Payments	RVUs
Non-HMO records	87%	84%	84%	88%	85%	85%
HMO fee-for-service records	81	73	74	80	72	75
Capitated HMO records	89	-----	85	81	-----	79

Note: This table shows the fraction of all potentially relevant bills. Relevant bills include practitioner care provided in 1999 or 2000, where the bill was the primary insurer's claim for an individual under age 65.

RELATIVE VALUE UNITS, CASE-MIX, AND OTHER ADJUSTMENTS

The development of the price and volume estimates involved several points of methodology requiring imputation or judgment. These methods are described briefly below.

Medicare RVUs. For this report, the 2000 Medicare Fee Schedule transitioned RVUs were used and were matched to both 1999 and 2000 data. These are the RVUs actually used by Medicare for 2000 payments and reflect the mid-point of Medicare's 4-year transition to resource-based practice expense payments.

As Medicare began moving toward resource-based practice expense payments in 1998, it became increasingly important to account for site-of-service payment differentials when matching RVUs to claims data. For many services, Medicare pays two different rates depending on whether the service was provided in a Medicare-paid facility (hospital, skilled nursing facility, or ambulatory surgical center) or in a provider's office. Lower payments for some services provided in facilities are intended to reflect the provider's lower practice expenses when services are provided in facilities, rather than in the practitioner's office.

Accordingly, the RVUs were matched to the MCDB claims by CPT code and place of service, following Medicare's methodology. For radiology and other services for which bills might represent either payment for professional component or payment of both professional and technical fees, RVUs were matched by CPT and modifier indicating the type of bill (professional only or professional plus technical bill).

Services without Medicare RVUs

RVUs had to be imputed for services not listed in the Medicare Fee Schedule. These included the following:

- Clinical laboratory tests. The Medicare Lab Fee Schedule was used to provide relative values for clinical lab tests. RVUs for lab tests were approximated by dividing Medicare's payment for each lab test by the 2000 Medicare Fee Schedule conversion factor. This put the inputed lab test RVUs onto the same scale as all the other RVUs.
- Other services with standard codes. Alphanumeric HCPCS codes and certain other CPT codes not used by Medicare were also given imputed RVUs. For each such code, average private payment per service was used to impute an RVU. The RVU was computed by "deflating" the average payment per service for that code. It was deflated by the typical private payment per RVU for similar codes, that is, for other codes in the same Berenson-Eggers Type of Service (BETOS) category. This forces the payment per RVU for the imputed RVUs to be identical to payment per RVU for similar codes for which the RVUs were not imputed. Using this approach, the estimated private conversion factor within each BETOS category should be the same whether the codes with imputed RVUs are included or excluded.
- Non-standard codes. Codes outside of CPT or HCPCS for which payers did not explicitly identify the service provided (and for which different payers might use the same code to represent different services) were not given RVUs. These codes are dropped from all analyses of payment per RVU.

Adjusting for service mix, payer mix, geographic mix

A few results in this analysis were adjusted for differences in the mix of services, for differences in payers' contribution to the totals, or for differences in the distribution of services across high-paying and low-paying areas. All of these adjustments follow the same basic methodology, and only the case-mix adjusted comparison of payers is explained here.

The unit of analysis used for the case-mix adjusted comparisons is the BETOS category. The BETOS system classifies the roughly 7,000 CPT codes into approximately 100 unique and relatively homogeneous categories of service. For example, there is one category for new patient office visits. For this analysis, certain exceptions were made

from Medicare's standard BETOS, including the creation of a separate category for childhood immunizations, and the modification of some BETOS categories to ensure that CPT codes remained in the same BETOS categories from 1999 to 2000.

Case-mix refers to the proportion of a payers' services that were billed in each of the 100 BETOS categories. For one payer, 10 percent of bills might be office visits, while another payer might have 50 percent of bills in that category. These payers have a different case-mix. Even if these payers used identical fee schedules, the payer with more office visits would show a lower payment per RVU, because payment per RVU for office visits is low relative to other services.

The case-mix adjusted comparison asks the following question: What would payment per RVU have been if both payers had purchased the same mix (or "basket") of services? This case-mix adjusted comparison provides a much better comparison of the two payers' rates. In particular, if the payers have identical fee schedules, the case-mix adjusted calculation will always yield identical payments per RVU.

The calculation of a case-mix adjusted comparison between payers takes place in three steps. The first step is to identify a reasonable basket of services that will be used to compare two payers. The usual choice is the total number of services produced in each BETOS category statewide by all payers.

Second, for each payer separately, the payment per RVU (price) in each BETOS category is calculated. This can be thought of as determining what each payer would pay for each item in the basket of services.

Third, the basket of services for each payer is priced out. For one payer, the total RVUs in each BETOS category for the statewide basket of services are multiplied by that payer's payment per RVU for that BETOS, then summed across all BETOS categories. Total payments divided by total RVUs is the case-mix adjusted payment per RVU for that payer. Comparing that figure across payers gives an estimate of the average generosity of their payments, which is independent of the actual mix of services provided.

Sensitivity Analysis for Average Private Non-HMO Payment per RVU

This section examines average private non-HMO payment per RVU. It shows how the estimated average payment per RVU would change if the underlying methods were changed. In essence, this section explores what would happen if certain assumptions, or

aspects of the methodology were wrong. The results reported are robust. Modest changes in the methods and assumptions underlying the calculations would not affect conclusions.

Do the claims data accurately capture total payments: bonus payments, balance billing, and similar issues?

A significant concern in the analysis of private payers' prices is whether the claims data accurately capture the actual payments made to physicians. The analysis was intended to reflect total payments that the physician received for providing care. This includes payment made by the insurer and all payment made directly by the patient, including deductible, coinsurance, and (for non-participating physicians) balance billing amounts.

Actual payments to physicians may differ systematically from the amount recorded on the claims for at least three reasons. First, total physician compensation may include payments beyond the per-service payment amounts reported on the claim. Such bonus payments may or may not be reported on the claim.

It is difficult to say exactly how much money is passed from plans to physicians under such arrangements in Maryland. Provider manuals for the largest Maryland insurer (CareFirst BlueCross BlueShield) suggest that for only one of its insurance products (Capital Care), qualified primary care physicians were paid at 90 percent of CareFirst fee schedule rates and received additional payments (based on quality and cost measures) on a per-member, per-month basis. Primary care physicians qualify by having at least 50 CapitalCare members in their practice with adequate claims experience to allow the physician's utilization patterns to be rated.[34]

Second, for one large Maryland insurer, a physician expert suggested that the payment amount reported on the claim may exceed the actual payment to the physician. That is, certain payer-based discounts are taken after the amounts shown on the claim. The insurer in question had an exceptionally high payment per RVU based on the claims data.

Finally, it is not clear that physicians actually collect the full "balance billing" amounts reported on the claims, or that payers report these balance billing amounts with complete accuracy. These are amounts for services to a plan's enrollees that were delivered by physicians not participating in that insurance plan.

[34] *Capital Care Provider Manual* (Washington, DC: Capital Care, no date given). This document can be accessed at http://www.carefirst.com/pages/providers/guides/CapCare_Provid.Rev3_01.pdf.

For such services provided on a non-emergency basis, beneficiaries in theory pay the full difference between the plan's allowance and the physician's submitted charge. Most non-HMO payers reported total payment on such claims equal to the physician's submitted charge.

Under the assumption that physicians actually collect these balance billing amounts, such payments should be included to provide an accurate picture of total payments received for care of the privately insured. Physicians may receive non-negligible income from balance billing amounts from privately insured patients. For Medicare patients, by contrast, almost no balance billing payments occur due to substantial statutory restrictions on balance billing. In Maryland, 98 percent of Medicare practitioner charges have no associated balance billing, and per-person liability for the remaining bills with balance billing liability is $22 per person with liability.[35]

On net, it appears that the impact of any reasonable error in estimating these factors would be small. First, to show the impact of potential non-collection of balance billing amounts, the non-HMO payment per RVU was recalculated excluding non-participating providers. Second, to investigate the impact of possible bonus payments not shown on the claims, the non-HMO payment per RVU was recalculated under the assumption that half the primary care physicians in the data set received an additional 10 percent bonus payment not reported on the claims. Primary care consisted of all identified general practice, family practice, pediatrics, and internal medicine physicians.

The impact of payments to non-participating physicians is fairly large (Table B-3). Dropping those bills from the analysis reduces the estimated payment per RVU for the non-HMO plans by 6 percent. Bonus payments for primary care physicians (at the level assumed here) do not matter significantly. If half the primary care physicians had received a 10 percent bonus payment, the overall conversion factor would have increased just 1 percent.

Table B-3: Investigating Alternative Assumptions about Balance Billing and Primary Care Bonus Payments

	$$/RVU	DIFFERENCE FROM BASELINE
Baseline Scenario: As presented in Report	$38.70	0%
Alternative 1: Exclude non-participating physicians	36.41	-6
Alternative 2: Assume half of primary care physicians receive 10 percent bonus payment not recorded on the claims data	39.01	1

[35] Table 60, *Medicare and Medicaid Statistical Supplement 2000*, Health Care Financing Review, Publication No. 03424 (Baltimore MD: Centers for Medicare and Medicaid Services, June 2001).

Do low visit prices by private payers reflect different approaches toward coding higher levels of visits?

The low average payment by private plans comes mainly from low prices paid for office visits. Medicare enforces a fairly standardized definition of each of the five levels of office visit, based on the complexity of the visit. The strictness of the visit definitions is, in part, what allows Medicare to pay higher rates for higher-valued office visits.

Private payers, by contrast, may not want to enforce visit coding rules to the same extent as Medicare. Private payers might prefer to pay lower rates for each level of visit, expect higher overall visit levels being coded, and accept that this would be a "wash" in terms of total payments for visit services.

A simple analysis of the claims data firmly rejects that potential explanation for low private visit fees. Comparing the distribution of established patient office visits for private non-HMO patients age 60 to 64 with Maryland Medicare patients age 65 to 69, there is no appreciable difference in the distribution of the visits across visit levels (Table B-4).

Table B-4: Distribution of Codes Billed for Established Patient Office Visits—Percent of 2000 Services

CPT	TYPICAL TIME (MINUTES)	MEDICARE PATIENTS AGE 65-69	PRIVATE NON-HMO PATIENTS AGE 60-64
99211	Brief (5 minutes)	4%	4%
99212	Short (10 minutes)	16	15
99213	Intermediate (15 minutes)	52	52
99214	Lengthy (25 minutes)	23	24
99215	Extensive (40 minutes)	5	5

Note: CPT codes are copyrighted by the American Medical Association.

Would changes in the claims edits and imputations affect the estimated payment per RVU?

Most of the data screens used to develop the final claims data set resulted in services other than visits being dropped from the data set. For example, one screen specifically removed claims for assistance at surgery. Although these screens were necessary to arrive at accurate payment rates, they may have distorted the overall (average) estimated

payment per RVU by down-weighting the proportion of care provided in high-payment areas such as surgery.

In addition, one set of screens removed claims with outlier payment amounts – claims with amounts below one-quarter or more than four times the average payment amount reported for all private payers. Although the number of claims involved was small, this might have had a substantial effect on estimated payment per RVU.

Finally, imputation of the RVUs for services not on the Medicare Physician Fee Schedule or Medicare Lab Fee Schedule might have affected overall results. An improperly calculated set of RVUs for these services could affect the overall estimated payment per RVU.

To test the sensitivity of the estimated payment per RVU to these elements of the method, the non-HMO payment per RVU was recalculated four ways. First, the data were re-weighted to reflect the distribution of spending by BETOS category prior to screening the claims. Second, payment per RVU was calculated with the high outlier claims included, and with both high and low outlier claims included. Next, payment per RVU was calculated only for those services where the RVU for the code did not have to be imputed from private payer data. That effectively restricts that analysis to services on either the Medicare Physician Fee Schedule or Medicare Lab Fee Schedule.

One last sensitivity analysis asks whether the average fee level might have been different if Medicare's case-mix had been used for calculating the average (rather than private plans' case-mix). Medicare's services are less heavily concentrated in visits and other office care, and include more tests and procedures.

Most of these changes had only a small impact on the estimated average payment per RVU (Table B-5). Reweighting the data to reflect the original distribution of spending by BETOS category would increase estimated average payment per RVU for non-HMO plans by 2 percent. Including the high outliers raises payment per RVU by 2 percent, while including all outliers leaves the aggregate estimated payment per RVU almost unchanged. Finally, calculating only on services with Medicare RVU data results in an estimated payment per RVU that is 1 percent below the baseline level. Re-weighting the data to match the Medicare case-mix would raise the estimated average private payment per RVU by 5 percent.

Table B-5: Impact of Alternative Assumptions for Weighting the Data, Screening the Claims, and Imputing RVUs

	$$/RVU	DIFFERENCE FROM BASELINE
Baseline Scenario: As presented in Report	$38.70	0%
Alternative 3: Reweight to reflect original spending distribution	39.56	2
Alternative 4: Include high outliers	39.40	2
Alternative 5: Include high and low outliers	38.90	1
Alternative 6: Exclude services with imputed RVUs	38.43	-1
Alternative 7: Reweight to reflect Medicare case-mix	40.50	5

MEDICARE PAYMENT RATES BEFORE AND AFTER THE MEDICARE FEE SCHEDULE

The difference between Medicare and private plan payment per RVU varied significantly by type of service. Private rates were below Medicare's for most visits, and substantially above Medicare's for most tests.

To a large degree, these differences by type of service reflect ongoing changes in Medicare's payment policy. Compared to its pre-1992 system of charge-based rates, the Medicare Fee Schedule now pays substantially higher fees for office visits and lower fees for many major procedures. Table B-6 shows the changes in Medicare fees from 1987 to 2002 for selected procedures.

Table B-6: Illustrative Changes in Medicare Payment Rates Before and After the Medicare Fee Schedule

CPT	DESCRIPTION	1987	2002	PCT CHANGE, 1987-2002
99204	Office Visit, New, Extended	$51	$131	156%
92014	Eye Exam & Treatment	40	91	129
76091	X-Ray Exam of Breasts	25	43	72
99254	Comprehensive Consultation	92	137	48
88104	Cytopathology	25	30	20
27244	Repair of Femur Fracture	1,216	1,137	-6
93510	Left Heart Catheterization	277	231	-17
70470	Contrast CAT Scans of Head	86	64	-25
27130	Total Hip Joint Replacement	2,490	1,452	-42
66983	Remove Cataract, Insert Lens	1,655	568	-66

Note: CPT code and descriptions are copyrighted by the American Medical Association. The 2002 rate listed is the non-facility payment rate under the Medicare Fee Schedule. Fees for radiology services are for professional component only.
Source: Part B Medicare Annual Data file (1987), Medicare Fee Schedule (2002)

Appendix C

Figure C-1:
Map of Maryland Regions